

REMARKS

Claims 1-9 and 11-32 are pending in the current application.

Claim 10 has been cancelled without prejudice.

Claims 1-3, 6, 9, 11, 13-15, 19, and 31 have been amended and claim 32 has been added, the support for each of the claims is as follows.

Support for the amendment to claim 1 and new claim 32 can be found at least on page 5, paragraph 21. Claims 2, 3, 13, 14, 19 and 31 have been amended to remove the trademark references and the allegedly indefinite terms “other materials” and “other solids” and they have been replaced with their respective functional definitions of the materials and the solids, respectively. Support for claim 9 can be found at least in original claim 10, and paragraph [0023] which bridges pages 5 to 6. Accordingly, no new matter has been added by way of these amendments and entry of this Amendment is respectfully requested.

Rejection under 35 U.S.C. § 112

The Examiner has rejected claims 2-4, 6-8, 13, 14, 19-21 and 31 under 35 U.S.C. § 112, second paragraph for being indefinite. The Examiner argues that the terms “other materials” and “other solids” are vague and indefinite. Also, the Examiner states that the use of trademarks within the claims can be somewhat indefinite due to the change in formulations. Finally, the Examiner states that the term “said layer of fire retardant material” in claim 6 lacks antecedent basis.

While not necessarily agreeing with the Examiner, the following amendments have been made to overcome the rejections:

- Claims 2, 3, 13, 14 and 19 have been amended to remove the terms “other materials” and “other solids,” and the specific examples of the materials and solids, thus leaving the functional definitions of these materials.
- Claims 2, 3, 13, 14, 19 and 31 have been amended to remove the trademark references.
- Claim 6 has been amended in order to change the dependency from claim 1 to claim 5, in order to provide antecedent basis for the term “said layer of fire retardant material,” as suggested by the Examiner, for which the Applicants thank the Examiner.

Accordingly, reconsideration and withdrawal of the rejections under § 112 are respectfully requested.

Rejections under 35 U.S.C. § 102 (b)

The Examiner has rejected claims 1-4, 9, 10, 12-14 and 26 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,172,031 to Hall ("Hall"). The Examiner states that Hall discloses an oil containment system comprising a support structure defining a plurality of cells and a layer of oil absorbing material and a layer of oil adsorbing material covering the material. The Examiner argues that this is all that is required by claims 1-4, 9, 10, 12-14, and 26. Applicants respectfully traverse the rejection and arguments in support thereof.

Applicants respectfully submit that Hall does not anticipate the amended claims. Claim 1 of the present application claims an oil spill containment system for containing oil spills or leaks from an oil containing vessel comprising a containment basin, a layer of oil absorbing material contained within said containment basin, and a layer of oil adsorbing material also contained within the containment basin, on top of said layer of absorbing material. Claim 9, claims an oil spill containment system for containing oil spills or leaks from an oil containing vessel, comprising a support structure defining a plurality of cells, an oil absorbing material received in the cells of the said support structure, and an oil adsorbing material received in the cells of said support structure on top of said oil absorbing material. Claim 26 is also directed towards using the present invention in a containment basin. In summary, the present invention is directed to and designed for (although not limited to) the remediation of oil spills that are from an oil containing vessel and are therefore, mostly, if not all, oil.

In contrast, Hall describes a method for filtering oil out of water, (*i.e.*, removing oil from a stream). The present invention discloses, and claims, an oil spill containment system for containing oil spills or leaks from an oil containing vessel, in contrast to filtering oil from an oil containing water source such as a stream. Hall does not anticipate the present invention since Hall does not disclose containing oil spills from an oil containing vessel.

Additionally, as claimed in claims 1 and 9 of the present application, the layer of oil adsorbing material is located on top of the layer of oil absorbing material. Hall discloses (for example in column 3, lines 1-6) a bed comprising a plurality of admixed particles, some of the particles having oleophilic surfaces admixed with a plurality of synthetic resinous particles

capable of imbibing oil (*see* also Fig. 3 of Hall). Therefore, in Hall, the oil absorbing material and the oil adsorbing material are admixed and do not comprise two discrete layers whereas, in the present invention, the adsorbing material primarily lies on top of the absorbing material forming two layers.

As previously stated, Hall cannot anticipate the presently claimed invention, because Hall is directed to a process for cleaning up oil leaks once they have spilled out into the environment, whereas the present invention contains oil leaks before they spill into the environment. Finally, Applicants note that the Hall reference is explicit in treating a maximum of 1,000 parts per million in oil water concentration. Therefore, the invention disclosed in Hall would not work as an oil spill containment system, as claimed herein “for containing oil spills or leaks from an oil containing vessel” where one would likely have close to 100% oil and not a 1,000 parts per million oil in water concentration.

Accordingly, Hall does not anticipate claims 1 or 9 of the present invention. Also, based on the arguments above and because claims 2-4, and 12-14 depend on claims 1 and 9, respectively, and claim 10 has been cancelled, Hall does not anticipate these dependent claims. Therefore, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

The Examiner has rejected claims 1-3, 9, 10, 14, and 26 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,264,450 to Ayers (“Ayers”). The Examiner argues that Ayers discloses an oil containment system comprising a support structure defining a plurality of cells, a layer of oil absorbing material and adsorbing material covering the absorbent material. Applicants respectfully traverse the rejection and arguments in support thereof.

Ayers does not anticipate the presently claimed invention because Ayers is not a system for containing oil spills or leaks from an oil containing vessel, as is claimed in claim 1 of the present application and as argued above. Rather, Ayers is directed to oil skimmers for skimming oil off of a water surface, such as a lake. Additionally, Ayers does not describe a layer of oil adsorbing material on top of a layer of oil absorbing material, both contained within a containment basin as claimed in claim 1. Rather, Ayers describes oil adsorbent bristles extending outwardly from an oil absorbent material. These bristles are not on top of the oil absorbing material. Instead, the bristles extend outwardly from the side of an oil absorbent

material. Neither the bristles nor the oil absorbent material is contained within a containment basin as is claimed in claim 1.

Regarding claim 9, Ayers does not teach a support structure defining a plurality of cells, an oil absorbing material received in the cells of said support structure, and an oil adsorbing material received in the cells of the support structure, on top of said oil absorbing material, as claimed in claim 9, and, also dependent claim 14. Specifically, the bristles in Ayers are not received in the cells of the support structure.

Regarding claim 26, Ayers simply does not teach a containment basin beneath an oil containing vessel, as is claimed in claim 26.

Also, Ayers does not anticipate the present invention, since Ayers is an invention for cleaning up oil leaks once they have spilled out into the environment. Whereas, the present invention is for containing oil leaks before they spill out into the environment as is discussed above. Accordingly, Ayers does not anticipate the presently claimed invention. Therefore, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

The Examiner rejected claims 1-3 and 26 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,189,310 to Hotta ("Hotta"). The Examiner contends that Hotta discloses an oil containment system comprising a layer of oil absorbing material and a layer of adsorbing material covering the absorbing material. Applicants respectfully traverse the rejection and arguments in support thereof for the following reasons.

First of all, Hotta teaches a filter system having peripheral walls of oil absorbent and oil adsorbent materials. Hotta does not disclose an oil adsorbing material on top of an oil absorbing material, all contained within a containment basin as claimed in claim 1. Also, Hotta does not disclose an oil containment basin beneath an oil containing vessel, as claimed in claim 26. Accordingly, Hotta does not anticipate the presently claimed invention.

Hotta discloses an apparatus for removing oil mist from an air stream, whereas the present invention is an oil spill containment system for containing liquid oil spills or leaks from an oil containing vessel. The invention described in Hotta is not able to contain oil spills or leaks from an oil containing vessel, since it deals with oil mist rather than liquid oil, and therefore would not anticipate the present invention. In addition, Hotta refers to oil mist and collection of oil using the disclosed device. It appears that the system in Hotta would collect any material mist including water or oil mist. The present invention is distinguishable, since it is specific to

oil. Accordingly, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

The Examiner rejected claims 9, 12 and 13 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 5,679,246 to Wilcox ("Wilcox"). The Examiner argues that Wilcox discloses an oil containment system comprising a support structure defining a plurality of cells, and an oil absorbing material. Applicants respectfully traverse the rejection and arguments in support thereof.

While not necessarily agreeing with the Examiner, claim 9 has been amended in order to incorporate the oil adsorbing material of claim 10, thus rendering the rejection of claim 9 (and 12 and 13) moot.

Additionally, Wilcox uses swelling beads to collect oil. For swelling to occur, the beads must dissolve the oil, to the contrary of what Wilcox claims. Applicant submits that the invention in Wilcox would not work where pure oil is involved, since given time, both oil and beads would form a homogenous viscous blend. Therefore, the Wilcox system would eventually collapse when pure oil is involved. Applicant carried out experiments to demonstrate that when the invention described in Wilcox was used with pure oil, the oil dissolved the beads. In contrast, the present invention is a secondary containment system that seals the oil in place following a spill. The oil and the co-polymer form an impermeable membrane that is impenetrable to oil and water or any other fluid. Only the fraction of co-polymer that comes in contact with oil is spent, leaving unreacted co-polymer. Three phases, namely oil and water, impermeable layer, and unspent co-polymer layer would exist for an indefinite period of time until the spill is remediated. In addition, the present system uses an adsorbing layer to trap oil, thereby providing a larger capacity to the system before the oil reaches the oil absorbing layer and starts the sealing process.

Accordingly, Wilcox fails to anticipate claims 9, 12 and 13 of the present invention. Therefore, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-8, 10, 11, 14, 15, 17-20 and 22-31 under 35 U.S.C. § 103(a) as being unpatentable over Wilcox in view of Hall. The Examiner argues that Wilcox discloses the claimed invention with the exception of the recited oil absorbent material. The

Examiner also argues that Hall teaches a similar oil containment system, and teaches utilizing an oil absorbent in combination with an oil adsorbent. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to provide the system of Wilcox with the oil adsorbent material of Hall in order to improve the oil removal capability of this primary reference system. Applicant respectfully traverses the rejection and arguments in support thereof as follows.

Hall and Wilcox do not disclose nor does it suggest the present invention, either alone or in combination. In fact, the combination of Wilcox and Hall does not contain every element of the present invention. For example, the combination of these references does not include the element of being in a containment basin (claim 1). Also, Wilcox and Hall, alone or in combination do not teach or suggest an oil absorbing material received in the cells of a support structure on top of said oil absorbing material (claim 9).

Additionally, one of ordinary skill in the art at the time of the invention would not combine Wilcox with Hall, because Hall is directed to preventing spills escaping from containment sites such as a tank by providing a drain. Hall, on the other hand, discloses a method of filtering oil out of running water, such as a stream or a brook. Also, in Hall, the absorbent and adsorbent materials are mixed, whereas in the present invention, the respective materials are layered. Also, there is no motivation for combining the two references in either of the two references or cited by the Examiner.

Even if an individual were to combine the references, they would not arrive at the present invention because not all of the elements of the present invention are disclosed in the references, as discussed above. Accordingly, Wilcox fails to make up for the deficiencies present in Hall, and the present invention is not obvious over Wilcox in view of Hall. Therefore, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

The Examiner has also rejected claims 16 and 21 under 35 U.S.C. § 103 (a) as being unpatentable over Wilcox in view of Hall and further in view of U.S. Patent No. 3,674,683 to Rainer ("Rainer"). The Examiner admits that the modified primary reference fails to teach crushed limestone. The Examiner argues that Rainer teaches utilizing limestone particles in combination with an oil absorbent material such as polyvinyl chloride and that it would have been obvious to one of ordinary skill in the art to include crushed limestone in the treatment materials.

The combination of Wilcox, Hall and Rainer does not disclose or suggest all the elements of the present invention. As described above, none of the references is directed towards, discloses or suggests the containment of oil from a containment vessel. Wilcox and Hall are described above and all of the arguments discussed above apply.

Rainer is directed to the process of removing oil from the surface of a body of water and does not disclose or suggest the removal of oil from a containment vessel. Accordingly, Rainer does not make up for the deficiencies of Wilcox and/or Hall. Therefore, the rejection is improper, and reconsideration and withdrawal are respectfully requested.

In conclusion, taking into consideration the above Remarks and the amendments, it is submitted that all of the claims are in condition for allowance, and reconsideration and a Notice of Allowance are respectfully solicited.

Respectfully submitted,

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